CFCS1

Lecture 1: Course Overview

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What is CFCS?

- Teaches some of the mathematical concepts behind Cognitive Science:
  - *Linear algebra*: How can we represent our data?
  - *Probability*: How do we talk about uncertainty?
  - *Information Theory*: How can we connect our data with uncertainty?
- The formal part of the course assumes little mathematical background.

What is CFCS?

- We use *Matlab* as our programming environment:
  - High-level support for linear algebra and statistics.
  - Good for visualising.
  - Widely used in research and industry.
- We assume a little programming experience, but explain the main concepts in detail.

People

- Frank Keller and Miles Osborne will teach.
- Yansong will help with labs etc and will take a tutorial.
- Moreno will take a tutorial class.

Course Web Page

All lecture notes (etc) will be online:

http://www.inf.ed.ac.uk/teaching/courses/cfcs1/

- You should print the lectures before the class.
- There are labs and three tutorial groups.

Tutorials

- Tuesdays, 2 – 3pm; AT
- Wednesdays 11 – 12pm, AT
- Thursdays 4 – 5pm; AT

Contact ITO if your group isn't suitable

Labs

- Wednesdays 1 – 3pm, AT
- Thursdays 1 – 3pm; AT

Assessment

- There will be four assignments (equally weighted, worth 25% in total).
- The written exam is worth 75%.

Hints about the assessments and the exams may be made during classes.

Assessment

Feb 1	Vectors in Matlab
Feb 15	Matrices in Matlab
Feb 26	Bayesian reasoning
Mar 12	Entropy

Passing

- At least 35% in the exam
- At least a total of 25% in the coursework
- A combined marked of at least 40%

Most people pass!

Plagiarism

Definition: Plagiarism is the act of copying or including in one's own work, without adequate acknowledgment, intentionally or unintentionally, the work of another. It is academically fraudulent and an offence against University discipline.

Details:
`http://www.inf.ed.ac.uk/teaching/plagiarism.html`

Plagiarism

Examples of plagiarism:

1. Including extracts from another person's work without the use of quotation marks and the acknowledgment of the source.
2. Summarizing another person's work without acknowledgment.
3. Using the ideas or help of another person without acknowledgment of the source.
4. Copying the work of another student, with or without their knowledge or agreement.
5. Collaborating with students or others on a piece of work that should be completed individually.
6. Cutting and pasting text, illustrations, diagrams, etc. from electronic sources without acknowledgment of the URL.

Books

- Anton, Howard and Robert C. Busby. 2003. Contemporary Linear Algebra. John Wiley, New York.
- Cover, Thomas M. and Joy A. Thomas. 2006. Elements of Information Theory. 2nd edition. John Wiley, New York.
- McMahon, David. 2007. MATLAB Demystified. McGraw-Hill, New York.
- Miller, Irwin and Marylees Miller. 2004. John E. Freund's Mathematical Statistics with Applications. 7th edition. Pearson Education, London.

Buy the Matlab book.